PRENTICE COMPUTER CENTRE

UNIVERSITY OF QUEENSLAND, ST. LUCIA, QUEENSLAND, AUSTRALIA. 4067.

NEWSLETTER

N-295 December 1984

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Authorized by the Director of the Computer Centre

Principal Service Centres

	Extensions
Contract Programming & Feasibility Studies	3944
System Status Automatic Answering	3101
General Enquiries & Course Enrolments	3018
Training & Courses	3021
Dial–up modem numbers	(300 bps) 3772977
	(1200 bps) 3772922

Consulting

PROBLEM AREA	**MAIL BOX**	**NAME AND EXTENSION**	
HELP Desks			
Central HELP Desk	CCHELP	Ellen Kraayvanger	3941
Distributed Computing and Network HELP Desk	CCDCHELP	Maralyn Kenley	3938
Operations and Programming			
Accounts	ACCOUNTS	Carol Walker	2188
Cobol	COBOL		
Commands, system use and probs	COMMANDS		
Database	DATABASE		
Fortran	FORTRAN		
Graphics	GRAPHICS		
Micros	MICROS		
Network	NETWORK		
Operations	OPERATIONS	Supervising Operator	3212
PDP–11 Software	PDP11		
Program Library	LIBRARY	Lee MacDonald	3943
Statistics Packages	STATISTICS		
Text processing, Typesetting	TEXT		
Non–specific problems	OPERATIONS		
Engineering and Maintenance			
Development and communications	ENGIN		
Mini/Micro support	ENGIN		
Griffith University:			
Consulting			7682
Computer Services			7560
Computing Co-ordinator			7561

Terminals, CDN & Equipment Pricing

For prices on microcomputers, terminals, line charges, computer bits and pieces, type HELP PRICES on your terminal. This will provide appropriate menus.

1. Newsletter Summary

- All central systems other than the KA will be available with operator attendance from 9am to 5pm on 27, 28 and 31 December and will operate unattended at other times.
- Two "Help Desks" have been established to assist users with problems. One covers difficulties associated with the use of computers and the other is for distributed computing and network problems. The help desks are staffed between 8.30am and 4.30pm Monday to Friday. Electronic Mail can be used at all times.
- A further warning is provided on expiry of accounts.
- Outstanding errors on the NAG (Numerical Algorithm) package are listed.
- Recent hardware problems on the KL10 system as a result of failure of the power supply in one of the memory units and errors on the 500 Megabyte disk drive are explained. A storm during early November destroyed circuitry on some network lines.
- Information is provided on the upgraded RSX-11M-Plus Operating System for PDP11 computers.
- The sources of information on what is available on the IBM and how to use the system has been summarised.
- The IBM Scientific Subroutine Package (SSP) is now available on the IBM 3083. It contains 250 FORTRAN subroutines covering statistics and mathematics.
- Courses available for staff and postgraduate students are listed.

Thank you for your cooperation during 1984 and I wish you an enjoyable festive season.

Director
extension 2189

2. Operations – Sandra Campbell, ext. 3471

2.1 System Availability over the Christmas Break

The KL, VAX, IBM and CAD/CAM systems will be available for operator attended running between the hours of 9am and 5pm on 27, 28 and 31 December 1984 and for unattended running at all other times.

Sandra Campbell
extension 3471

2.2 HELP Desk Facilities

The Centre has always provided a Consulting Service to assist users in solving problems encountered with our services.

Up to five or six years ago, consulting work was largely limited to questions on the operating system (there was only one!) and problems with Fortran programs. In recent years there has been a tremendous growth in the diversity of both system software and application areas supported by the Centre. In operating systems alone we now assist users with VM/CMS, TOPS-10, VMS, EUNICE, UNIX, RSX-11,

RSX-11M, TSX and RT-11. Supported applications include statistical packages (SPSS and SAS), maths packages, typesetting, data base, CAD/CAM and communications to name but a few. Obviously this ever increasing diversity requires greater specialisation by our staff and makes the provision of an appropriate and timely consulting service on any specific topic very difficult.

To improve the consulting service, we are extending the concept of the 'IBM Help' desk set-up as a trial earlier this year. This 'Help' desk has proved very successful with more than 67% of user queries being resolved **immediately** at the desk. Two HELP desks have now been established.

The Central Computing HELP desk is staffed by Supervising Computer Operators in rotation, who handle all problems related to the IBM, DEC-10 or VAX 11/780 mainframes and peripherals including the typesetter and plotters in the Centre. The desk can be reached on extension 3941 during normal working hours (8.30am – 4.30pm Monday to Friday) or electronic mail messages can be sent at any time to the address "CCHELP" on any of those mainframes.

Electronic mail will be cleared first thing every morning and then regularly during the day.

The Distributed Computing and Network HELP desk is staffed by Maralyn Kenley who will handle all problems related to departmental/divisional machines and the communications network. The phone number of this desk is extension 3938 and electronic mail address on all mainframes is "CCDCHELP". In addition, a message recorder on extension 3938 allows users to report problems after hours for action the next day.

On both HELP desks, the staff will be able to answer the majority of queries immediately. Unanswered problems will be forwarded to specialist staff who will return the answer via the HELP desk or contact the user directly for further discussion on the problem. In order to ensure ready access to the HELP desks by all, calls will be limited to 10 minutes.

Clients must note that the HELP desks are for problem solving. Queries on accounting must still be directed to extension 2188 while bookings for courses and general enquiries should go to extension 3018.

We believe these arrangements will provide a greatly improved consulting service in that:

(a) it provides central contact points for all problems,

(b) it is an 8.30am – 4.30pm service which immediately responds to the majority of problems,

(c) referred problems will be followed up to ensure the earliest practical response,

(d) mechanisms exist for users to report problems out-of-hours, and

(e) all users, whether on the St Lucia campus or remotely located, will receive the same high level of service.

Sandra Campbell
extension 3471

2.3 Expiration of Machine Accounts

On 24 December each year all PPN's on the DEC-10's and UIC's on the VAX expire, unless the Centre has been notified in writing that a PPN/UIC is required for anoth-

er year. *The term "expire" means that all files owned by that PPN, both on-line and off-line, are deleted, any balance of commitment is taken to 0 and PPN and charge code are deleted from the system.*

As you can imagine then, it is imperative that if you intend to keep using your account for the following year you must complete the "change of expiry date" form, prior to 24 December each year. Separate forms for KA/KL and VAX users are at the Accounts office and attached here.

We do this not to make life difficult for you, but merely to keep disk space clear and overheads down. Each year many people leave the University, go away on the Special Studies Programme or finish post graduate research and omit to notify us that they have finished with their account. Expiring accounts is our way, then, of keeping the system operating efficiently for the user's continued benefit.

Clients with IBM accounts should note that the expiration date is that which was previously specified on the Authority to Establish/Alter an IBM Virtual Machine.

Carol Walker
extension 2188

3. Software Maintenance — Ian Burgess, ext. 4074

3.1 NAG — Description of Outstanding Errors

The following errors apply to the NAG libraries on the KL and VAX.

Routine	***Description of Error***
D01AJF D01ALF	Underflow may result in an attempt to compute ALOG (or DLOG) of zero
E04ZAF	(Beware) fails to detect an error in the user-supplied gradients when N = Z
G01AAF	Underflow may occur if any of the observations X(i) are very close to the mean
G05DGF G05DJF G05DKF G05DLF G05DMF	Underflow may result in an attempt to compute ALOG (or DLOG) of zero

Any problems concerning these routines may be directed to me.

Lee MacDonald
extension 3943

4.0 Engineering and Communications Services — Graham Rees, ext. 3288

4.1 KL System

The unattended running KL system failed during the weekend 3-4 November 1984 due to a failed power supply in one of the memory units. This was rectified on Monday 5th during normal PM time.

One of our 500 Megabyte Winchester RP07 disc drives has been causing concern lately with an increasing rate of soft errors. Although this was not apparent to the user, its complete failure on Saturday 10-NOV-84 caused the system to be unavailable until the wee hours of the morning of Tuesday 13th, when the complete head and disc assembly was replaced by Digital Equipment Australia Pty Ltd. The subsequent error rate on the new HDA assembly is also too high and DEA are currently investigating this. In the meantime (from 17-NOV-84 to date of writing) this structure has been replaced with a 3 by RP06, 200 megabyte disc drive structure with a consequent reduction in available RP06 drives for mounting private structures etc.

Graham Jerrard
extension 3168

4.2 Communications

A couple of fierce storms in early November apparently caused enough electrical interference to destroy some circuitry at each end of several lines between the Prentice Computer Centre in the Hawken Building and the outstation end in another building within the St Lucia campus. The protection of this equipment by installation of lightning protective devices across these lines is currently being investigated.

Graham Jerrard
extension 3168

5. Distributed Computing – Geoffrey Dengate, ext. 3391

5.1 RSX-11M vs RSX-11M-Plus

RSX-11M-Plus provides the user with a lot of features not available under RSX-11M. Listed below are some of the advantages of upgrading from RSX-11M to RSX-11M-Plus, some compatibilities and incompatibilities with existing RSX-11M software, and some restrictions of RSX-11M-Plus.

Advantages

1. RSX-11M-Plus supports Kernel instruction/data space, user instruction/data space, and Supervisor instruction space. (These features are implemented on the 11/44 and 11/73 processors).
2. More primary pool. The Kernel I/D space allows up to approximately 14Kw of primary pool.
3. Secondary pool is implemented (which is size selectable). Some of the structures that have been moved from primary pool to secondary pool include:
   - File Windows
   - Prototype Task Control Blocks (for ...xxx tasks)
   - MCR/CLI command buffers
   - Send/Receive data packets

   Task headers have been moved from primary pool to main memory (in task region).

4. Better memory utilisation.
   - Multi-user tasks (one shared copy of read-only code and data)
   - Checkpointable data commons
   - Supervisor mode libraries
5. Better disk performance.
   - Dynamic dual pathing (for load sharing or dual-porting between two CPU's)
   - Overlapped seeks
   - Seek optimisation
   - Large file windows
6. Extended virtual address space.
   - Support for User I/D space (Fortran-77, TKB and PLAS directives support the creation of I/D regions)
   - Support for Supervisor mode libraries (TKB generates transparent call sequence similar to overlays)
   - PLAS directives allow the creation of Supervisor I space windows
   - Standard FCS Supervisor library supplied
   - (Supervisor mode is supported in hardware on the 11/44)
   - Supervisor mode gives an effective extra set of APR's
   - Total theoretical address space for task = 96Kw
     User I space = 32Kw
     User D space = 32Kw
     Supervisor I space = 32Kw
7. Enhanced data integrity.
   - Shadow recording allows transparent volume level mirroring of critical data (keeping 2 copies of data on-line – when you update the first, the system automatically updates the second)
   - On-line reconfiguration allows isolation of failing devices
8. Executive enhancements.
   - Variable length Send/Receive data packets
   - Checkpointable common regions
   - Read single event flags
   - GIN$ directive allows a privileged task to drop its privilege level for file access (to ensure access is valid by invoking the system protection mechanism), and then being able to reinstate the original privileges.
9. System management features.
   - Resource accounting
   - System produced loadable device databases
   - On-line reconfiguration
10. Multi-stream batch.

Compatibilities/Incompatibilities between RSX-11M and RSX-11M-Plus

1. Non-privileged tasks are compatible at the task image level.
2. "Standard" user written drivers are fairly portable, and are often easy to upgrade. One of the biggest changes here is the Unit Control Block now contains 3 extra fields, for storing the device geometry.

3. Privileged tasks are often transportable, as the concepts and data structures in RSX-11M-Plus are similar to those in RSX-11M. Some differences listed were:

   – Address checking
   – I/O packets
   – Task headers (now no longer in primary pool)
   – I space commons
   – GIN$ Get/Set information

   (Most of the differences are listed in the RSX-11M-Plus Guide to Writing I/O Drivers manual).

Restrictions

Some restrictions have been forced upon the later versions of RSX-11M-Plus due to the ever-increasing size and complexity of the executive.

1. No 18-bit system support. This means that you cannot run RSX-11M-Plus on your 11/34. As outlined in Newsletter N-290 a PDP-11/34 can now be upgraded to a 22 bit system based on the 11/73 processor and hence it becomes capable of running RSX-11M-Plus.
2. Some older devices will not be supported. A list provided included:

   RF-11 series disk
   TX-11 series cassette
   TC-11 TU56 DECtape
   PC-11 paper tape
   UDC-11 universal Digital controller
   VT-11 graphics processor
   VS-60 graphics display
   DJ-11 terminal controller

   and eventually the RK05 series disks.

So, why RSX-11M-Plus?

Current technology implies that low-cost, large memory systems are the future, and RSX-11M-Plus makes better use of large physical memory systems. RSX-11M-Plus provides a lot of new features which RSX-11M could not even possibly support. RSX-11M-Plus gives better performance of peripherals, by optimising the use of them. With RSX-11M-Plus, you can address tasks with a virtual address space of 96Kw, as opposed to 32Kw with RSX-11M. The load handling on RSX-11M-Plus is much better. DEC suggests RSX-11M-Plus can support about twice as many terminals and active tasks as RSX-11M systems.

Danny Smith
extension 4166

6. Software Development – Allan Woodland, ext. 2935

6.1 Information sources on the IBM 3083 (UQVM) System

Have you been wondering how to find out what's available on the IBM system, and how to use it? If you have, then this item outlines some of the information sources available to general users on that system.

* NEWUSER – the first few times you use a new userid (account) on UQVM, you will be presented with a one-page summary of information sources. This is to help you get started and to serve as a reminder of the available information.

  Although this happens automatically for new users, you can access this summary at any time by using the NEWUSER command.

* INFO – This command enables a user to find information about facilities on the system in a structured way, without requiring the user to know about the system commands. The information is structured according to task rather than system commands, and includes information on custom-developed as well as system commands.

* SEARCH – This command enables a user to search the summary files used by the INFO command to enable a high level query for the user uncertain about the commands available. For example, the command 'SEARCH COMPARE' would display a summary list of commands which are used for comparison operations. The user could then use the INFO command for any or each of these to elicit further information.

* NEWS – This command will present the user with news on any specified topic, or permit the user to select from a list of available NEWS items. Normally, a user will only be shown new 'NEWS' items.

* The HELP DESK – is available during working hours on 377-3941, or you can send a NOTE to CCHELP once you get a bit more accustomed to the electronic mail facilities.

* HELP – this command leads to extensive on-line HELP information on the standard VM/CMS system software (CMS, CP, and XEDIT commands and messages).

  The HELP facility allows you to display a menu of the components for which HELP files are available, a menu of the HELP files available for a particular component, and the actual HELP files. HELP files contain descriptions, formats, and parameters of CMS and CP commands, EDIT, XEDIT, and DEBUG subcommands, and EXEC and EXEC 2 control statements, and descriptions of CMS and CP messages.

* NEWSL – On-line newsletters. The NEWSL command was described in newsletter N294. Simply enter "NEWSL" to access the on-line newsletters, or "NEWSL ?" to access the on-line information for the NEWSL command.

* MANUALS – this command shows you a list of IBM documentation applicable to the software installed on this system. Manuals are either available from or can be ordered through the University Bookshop.

Arthur Pool
extension 2952

6.2 IBM Scientific Subroutine Package (SSP)

The IBM Scientific Subroutine Package (SSP) is now available on the IBM 3083 system (UQVM). This package is comprised of over 250 FORTRAN subroutines which are divided into two groups – statistics and mathematics. Also, over 200 subroutines are presented in both single and double precision mode.

All these subroutines have been compiled and the object code placed in SSPFORT TXTLIB, which is now automatically GLOBAL'ed by default when you

logon and when you use the FORTVS EXEC to compile FORTRAN programs.

To use the SSP routines on the IBM 3083:

1. Include CALLs to the required routines in your program;
2. These routines will normally be loaded automatically for you. If, however, you issue your own GLOBAL TXTLIB commands either from the terminal or from within EXEC files, and you wish to use SSP, you should change any GLOBAL TXTLIB statements to include SSPFORT. As a model, the FORTVS EXEC command now includes the following:

   GLOBAL TXTLIB VFORTLIB TFORTLIB UTILITY CMSLIB TSOLIB SSPFORT

Additional information:

Enter INFO SSP to access the online information;

Enter BROWSE SSPFORT MACLIB if you wish to read the source code or the descriptions and subroutine calls stored with the code. You may then use the following BROWSE subcommands:

"DICT" provides a list of all the SSP subroutines;
"MEMBER nnnnnn" shows the contents of the specified subroutine;
Press PF1 for help;
Press PF3 to exit from BROWSE.

Noela Meier
extension 2952

7. User Services — Tony Bird, ext. 3944

7.1 Information Concerning Courses

The schedule of courses for the remainder of 1984 and the beginning of 1985 is as set out below.

Please note change of location:

The final courses for this year and all courses in 1985 (except for those designated GU) will be conducted in the teaching room situated in the "old Computer Science huts", near the University Bookshop. Please enter via the middle landing between the two buildings. (Courses designated GU will be held in the AES Terminal Laboratories, Griffith University).

1984

December

SPSS	December 17-21 5 half days 9-12 each day
SAS	December 17-21 5 half days 1-4 each day

1985

January

Introduction to PDP-10	January 7-10 4 half days 9-12 each day

Conversion to IBM	January 8-10 3 half days 1-4 each day
Typesetting	January 14-17 4 half days 9-12 each day
Introduction to IBM	January 15-18 4 half days 1-4 each day
RUNOFF	January 21-24 4 half days 9-12 each day
SAS	January 21-25 5 half days 1-4 each day
CAD/CAM	January 21-24 4 full days 9-12 + 1-4 each day
Conversion to IBM	January 29-February 1 4 half days 9-12 each day
Introduction to PDP-10	January 29-February 1 4 half days 1-4 each day
Introduction to PDP-10 (GU)	January 29-February 1 4 half days 9-12 each day

February

Introduction to UNIX on the IBM 3083	February 4-8 4 half days 9-12 each day
SCRIPT	February 4-8 4 half days 1-4 each day
Conversion to IBM (GU)	February 4-7 3 half days 9-12 each day
1022 (GU)	February 4-8 4 half days 1-4 each day
Introduction to IBM	February 11-14 4 half days 1-4 each day
SQL	February 12-15 4 half days 9-12 each day
RUNOFF (GU)	February 11-15 5 half days 9-12 each day
SAS (GU)	February 11-15 5 half days 1-4 each day

Enrolments for all courses may be made by phoning extension 3018.

Barry Maher
extension 3021

8. Miscellaneous

8.1 Departmental Equipment for Sale

TEDI (Tertiary Education Institute) has for sale 1 only Apple II Europlus computer, 64K memory, green screen monitor, 1 only Apple Disk II drive. In as new condition. $1,000 o.n.o. Contact Geoff Isaacs, ext. 3089 or message, ext. 3158.